THE DEFECTIVE SIGHTING ARRANGEMENT OF THE MANNLICHER-CARCANO RIFLE (Abbreviated)

by Richard Bernabei

What follows is an abbreviated version of a report dealing with the defective sighting arrangement of the Mannlicher-Carcano (M-C) rifle which allegedly was used in the assassination of President Kennedy.

The report does not bear on the assassination itself. Instead, it examines the analysis and the analyser of the ballistic data which led the writers of the Warren Report (WR) to conclude that "the defect was one which would have assisted the assassin" (WR 194).

That assertion rests on the condition that the defect which existed when the rifle was first test-fired also existed when the assassination took place. The report that follows will conclusively establish not merely that the WR's assertion is false, but that it is diametrically the opposite of the truth. The defect that existed when the rifle was first test-fired would not have facilitated accurate shooting; it would have been an almost insurmountable detriment.

The WR's assertion is based entirely on the experiments, observations, and conclusions of FBI firearms expert Robert A. Frazier. It is highly probable that when Frazier testified for the Warren Commission, he knew precisely the degree to which the defect would have been detrimental to accurate shooting, that he willfully concealed important knowledge bearing on the question, and that he falsely indicated that the defect was not a detriment.

Frazier's test-firing of the M-C rifle

Frazier test-fired the M-C rifle in three series of tests. The first two were fired on 27 November 1963 at the FBI firing range in Washington, D.C. He fired the third series at Quantico, Virginia, on 16 March 1964. (3H 402-405)

The first series was fired at a distance of 15 yards from the target. Frazier and FBI agent Cortland Cunningham each fired 3 shots from the M-C into a target which came into evidence as CE 548. The 6 bullets struck this target about 4 inches above the point of where the telescopic sight was aimed.

In the second series, Frazier alone fired 6 shots from a distance of 25 yards into the target that came into evidence as CE 550. Five of the 6 bullets struck 4 to 5 inches above the point of aim; a sixth shot was "wild".

In the third series, Frazier alone fired the four 100-yard targets that came into evidence as CEs 551-554. Before firing these targets, Frazier test-fired on the 100-yard range, and unsuccessfully attempted to adjust the scope-sight so that the bullets would strike where the scope was aimed. The internal adjusting mechanism did not permit the scope to be properly aligned, but Frazier was satisfied when the bullets struck the 100-yard targets approximately 5 inches above the point of aim. That is the location of the bullet holes in CEs 551-554.

The issue in question

In a letter dated 26 March 1964, J. Edgar Hoover advised the Commission (CE 2724):

> It is to be noted that at the time of firing these tests, the telescopic sight could not be properly aligned with the target since the sight reached the limit of its adjustment before reaching accurate alignment. The present error in alignment, if it did exist at the time of the assassination, would be in favor of the shooter since the weapon is presently grouping high...with respect to the point of aim, and would have tended to reduce the need for "leading" a moving target in aiming the rifle.

Frazier's testimony before the Commission corresponds to Hoover's statements in all essential respects. Furthermore, Frazier calculates that, using a properly sighted rifle, an assassin in the Depository ideally would aim 4 to 6 inches above his intended moving target, the midpoint of the Predident's head (3H409). The WR bases its conclusion on Frazier's testimony (WR 194):

> All of the shots were a few inches high...The defect was one which would have assisted the assassin aiming at a target which was moving away. Frazier said, "The fact that the crosshairs are set high would actually compensate for any lead which had to be taken. So that if you aimed with this weapon as it was actually received at the laboratory, it would not be necessary to take any lead whatsoever in order to hit the intended object. The scope would accomplish that for you."

Examination of ballistic data will disclose that when Frazier first fired the rifle, it was sighted-in on a much higher trajectory than the foregoing statements of Hoover, the WR, and Frazier imply.

Comparative testing and examination of ballistic data

Three main factors affect bullet trajectory: caliber, weight, and velocity. Because a M-C rifle and cartridges were not available for reconstructing Frazier's tests, the calculations described below relate specifically to the Mannlicher-Schoenauer (M-S) which fires bullets of ballistic properties identical to those of the M-C. Both rifles fire 6.5 mm bullets of 160 grains weight at a muzzle velocity of 2160 feet per second. Calculations based on the M-S are equally valid for the M-C.

On both the M-C rifle which Frazier used and the M-S rifle used for comparative testing, the scope was located 1½ inches above the rifle bore.

The 6.5 mm M-S rifle was sighted-in so that bullets struck 4 inches high when fired at an aiming point on a target 15 yards away. This sighting arrangement corresponds exactly to the sighting arrangement of the M-C rifle when Frazier and Cunningham fired target CE 548. The point of impact for bullets fired under the designated conditions is 29 inches high at 100 yards.

Under conditions similar to those that are supposed to have existed at the time of the assassination, the computed point of impact for bullets fired downward is 25 inches above the point of aim at 90 yards, the approximate distance between the President and the easternmost window on the sixth floor of the Texas School Book Depository.

Frazier's knowledge of the high trajectory: a) in Washington

It is difficult to suppose that a man of Frazier's copious knowledge and extensive experience failed to perceive that the bullets which struck target CE 548 four inches above the point of aim were moving upward in an unusually steep trajectory; a properly sighted rifle would have caused bullets to strike slightly below the point of aim at 15 yards.

Target CE 550, fired at 25 yards, renders almost inconceivable the supposition that Frazier failed to perceive the unusually high trajectory. On this target the group of shots occurs slightly higher than on the 15-yard target. The two targets together offer clear and measurable indication that the bullets were moving steeply upward. A properly sighted rifle would cause bullets to strike almost on the point of aim at 25 yards.

Frazier's knowledge of the high trajectory: b) at Quantico

Even if the high trajectory escaped his notice at the short range, Frazier connot have avoided knowing that at 100 yards the bullets were striking far above the point of aim. He must have observed it on the first 100-yard target that he fired, for only his knowledge of the exceedingly high trajectory would impell him to adjust the scope.

Fired at 100 yards, the shots which struck CEs 551-554 grouped about 5 inches above the point of aim. These targets came into evidence, but they were not fired under the sighting condition that existed when Frazier and Cunningham first fired the M-C rifle. Frazier clearly indicates that he first fired 100-yard targets which did not come into evidence (3H405). No less accurately than the first 15-yard target, but much more vividly, the first 100-yard target undoubtedly showed that the defective sighting arrangement of the M-C rifle would have been an enormous detriment to accuracy.

The loose scope mount

After testifying on matters which led to the conclusion that the defect would have facilitated accurate shooting, Frazier discloses information that should have made moot all other discussion concerning conditions that might have existed at the time of the assassination. He states that the mount which supported the scope was loosely attached to the rifle when he received it, and that the screws securing the mount had to be tightened before test-firing (3H411).

Conclusion

Frazier appears deliberately to have lied concerning the "benefit" of the defective sighting arrangement. His testimony made it possible for the writers of the WR to describe the defect as "one which would have assisted the assassin." Although the WR adopts an unwarranted hypothesis, that the same defect existed both when Frazier test-fired the rifle and when the assassination occurred, nevertheless it issues a conclusion which is diametrically the opposite of the truth.

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